REMARKS

Claims 23-29, 31-39, 68-80, 82 and 84-97 are pending in this application, with Claims 25, 26, 28, 35, 36, 69-71, 73-75, 77-79 and 85-94 withdrawn from consideration as being directed to a non-elected species, and with Claims 1-22, 30, 40-67, 81 and 83 canceled. Thus, Claims 23, 24, 27, 29, 31-34, 37-39, 68, 72, 76, 80, 82, 84 and 95-97 are under active examination. A complete **Listing of Claims** with appropriate status identifier begins on page 2 of this communication.

The arguments presented herein are respectfully submitted to place the application in condition for allowance, or at a minimum, in better condition for appeal (MPEP § 714.13). In particular, the arguments should result in no additional search or examination burden for the Examiner. Accordingly, entry of the arguments provided herewith is respectfully requested.

With respect to all amendments and cancelled claims, Applicants have not dedicated or abandoned any unclaimed subject matter and moreover, have not acquiesced to any rejections or objections made by the Patent Office. Applicants expressly reserve the right to pursue prosecution of any presently excluded subject matter or claim embodiments in one or more future continuation and/or divisional application(s).

Although claims 25, 26, 28, 35, 36, 69-71, 73-75, 77-79, and 85-94 have been withdrawn from consideration as being directed to a non-elected species, Applicants note that upon allowance of a generic claim, Applicants will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 C.F.R. §1.141.

Applicants have carefully considered the points raised in the Office Action and believe that the Examiner's concerns have been addressed herein, thereby placing this case into condition for allowance.

Initially, Applicants respectfully direct the Examiner's attention to the phrase "substitute specification" found in the current Office Action, examples of which include the recitation at

page 21, line 8, in conjunction with the rejection under 35 U.S.C. § 102 (Office Action, page 20, item 26), and the recitations at page 27, lines 16, 23 and 29 in conjunction with the rejection under 35 U.S.C. § 102 (Office Action, page 24, item 27).

Applicants respectfully submit that the current application has no substitute specification. Thus, it appears that the Examiner has inadvertently used the substitute specification of the parent application (U.S. Application No. 08/870,762, filed June 6, 1997) of which the current application is a continuation-in-part, in the formulation of rejections for the current application. Accordingly, Applicants respectfully request at a minimum removal of the finality of the current Office Action and issuance of a new Office Action which relies on the current specification rather than the specification of U.S. Application No. 08/870,762.

Provisional Rejections Under Judicially Created Doctrine of Obviousness-type Double Patenting

The instant claims were provisionally rejected (Office Action, page 2, item 5) under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-16 of co-pending U.S. Pat. Application No. 09/870,762. Claims 33 and 82 were provisionally rejected (Office Action, page 2, item 6) under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claim 6 of U.S. Pat. Application No. 10/851,574 ("the '574 application").

Applicants note that U.S. Pat. Application No. 09/870,762, as recited in the Office Action at page 2, line 21, is a patented case (U.S. Pat. No. 6,727,075) directed to entirely different subject matter than that contemplated in the current application. Accordingly, Applicants assume that the reference to "U.S. Pat. Application No. 09/870,762" is the result of a typographical error, which should properly refer to U.S. Pat. Application No. 08/870,762 (the '762 application).

Applicants submit herewith terminal disclaimers to any patent(s) issuing from the '762 and '574 applications. Accordingly, Applicants respectfully request reconsideration and withdrawal of the current rejections.

Rejections under Judicially Created Doctrine of Obviousness-type Double Patenting

Claims 23, 24, 33 and 34

The rejection of Claims 23, 24, 33 and 34 (Officc Action, page 5, item 21) under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 34 and 35 of U.S. Pat. No. 5,686,411 ("the '411 patent") as evidenced by Tsanev (*Vutr. Boles* 23:12-17, 1984, abstract), is respectfully traversed.

Claim 23 of the instant application as currently amended provides a method for treating obesity in a human subject in need of such treatment comprising administration of a composition containing a defined amount of an amylin or an amylin agonist, wherein the amount of amylin or amylin agonist administered is effective to treat obesity in the subject, wherein the composition is not administered in conjunction with another obesity relief agent, and wherein the subject is in need of treatment for obesity. Claim 24, dependent on Claim 23, further requires that the amylin agonist is an amylin agonist analogue. Claim 33, as amended, provides a method for treating obesity in a human in need of treatment for obesity consisting of administcring to a human subject an amount of a composition effective to treat obesity in the subject, the composition comprising a defined amount of an obesity relief agcnt consisting of an amylin or an amylin agonist and a pharmaceutically acceptable carrier.

In contrast, Claims 34 and 35 of the '411 patent are directed to methods for the treatment of diabetes mellitus in a mammal comprising the administration of a therapeutically effective amount of a particular amylin agonist analogue.

Indeed, the cited claims of the '411 patent are silent with regard to treating obesity. However, in an attcmpt to cure the deficiency of Claims 34 and 35 of the '411 patent, the Examiner relies on Tsanev (*Id.*) to provide alleged evidence that 80-90% of diabetic patients are obcse. In view of the disclosure of Tsanev (*Id.*), the Examiner asserts (Office Action, page 6, lines 10-13) that "[g]iven the art-known prevalence of intrinsic obesity in 80% to 90% of diabetic patients as disclosed by Tsanev, at least one of the human diabetic patients used in the method disclosed in the '411 patent qualified as a human patient in need of treatment for obesity." The

Examiner further asserts (Office action, page 6, lines 13-16) that "the method of the '411 patent comprising or consisting of the administration of 0.1 to 5 mg, 0.5 to 1.0 mg of the amylin agonist, ^{25,28,29}Pro-human amylin alone or in conjunction with insulin or glucagon, to a diabetic patient anticipates the instant claims (*emphasis added*)."

Even *arguendo* if obesity is common among those with diabetes, a claim to treating diabetes mellitus with an amylin agonist analogue does not necessarily teach or suggest treating patients with obesity as claimed. In particular, nothing in the cited claims teaches or suggests the use of an amylin or an amylin agonist in an amount effective to treat obesity. Yet further, nothing in the cited claims teaches or suggests the identification of a subject in need of treatment for obesity. The courts have held that the phrase "in need thereof" (e.g., as recited in independent Claims 23, 33 and 76) is meaningful, and that "the claims' recitation of a patient or a human 'in need' gives life and meaning to the preambles' statement of purpose." *Jansen v. Rexall Sundown, Inc.* 342 F.3d 1329, 1333 (Fed. Cir. 2003). Thus, since the cited claims do not teach or suggest treating obesity, the intent of treat human subjects in need of treatment for obesity, or the use of an amount effective to treat obesity, a skilled artisan would have no expectation of success for the claimed invention in view of the cited claims.

Applicants further disagree with the Examiner's assertion of inherent anticipation in view of Tsanev (*Id.*). Anticipation based on inherency is appropriate only when the prior art relied upon necessarily includes all of the elements of the claims in question, *Atofina v. Great Lakes Chemical Corp.*, 441 F.3d 991, 78 USPQ2d 1417, 1424 (Fed. Cir. 2006), and is the natural result of following the instructions or examples of the prior art. *SmithKline Beecham Corp. v. Apotex Corp.,* 403 F.3d 1331, 1334, 74 USPQ2d 1398, 1407 (Fed. Cir. 2005) (citing *Schering Corp. v. Geneva Pharms., Inc.*, 339 F. 3d 1373, 1377, 67 USPQ2d 1664, 1667 (Fed. Cir. 2003)). The Court in *Schering* relied in part on the decision *In re Cruciferous Sprouts Litigation,* 301 F.3d 1343, 1351, 64 USPQ2d 1202, 1206 (Fed. Cir. 2002) wherein it was noted that to demonstrate inherency, it was necessary to show that the prior art necessarily, always functions in accordance with the claims addressed. The requirement that the teaching of a reference always, under any circumstances, necessarily satisfies the recitation of the claims to make out a case of inherent

anticipation was reaffirmed by the Federal Circuit in *Abbott Laboratories v. Baxter Pharmaceutical Products, Inc.*, 471 F.3d 1363, 1368 (Fed. Cir. 2006). It is well settled that a determination of inherency cannot be established by probabilities or possibilities, but that it is incumbent upon the Examiner to establish the inevitability of the inherency which is propounded. *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981); *In re Wilding*, 535 F.2d 631, 635-36, 190 USPQ 59, 63-64 (CCPA 1976).

As acknowledged by the Examiner (Office Action, page 6, lines 11-12), Tsanev (*Id.*) discloses that 80-90% of diabetic patients are obese. Accordingly, 80-90% falls short of the 100% (i.e., always, under any circumstances) criterion required by the claims and required by the law. Accordingly, Claims 34 and 35 of the '411 patent do not support *prima facie* obviousness with regard to the claimed invention, and Applicants respectfully request reconsideration and withdrawal of the present rejection.

Claims 23 and 33

The rejection of Claims 23 and 33 (Office Action, page 6, item 22) under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over Claims 11 and 13 of U.S. Pat. No. 5,321,008 (hereinafter "the '008 patent) as evidenced by Tsanev (*Id.*) and by U.S. Pat. No. 5,739,106 (hereinafter "the '106 patent"), is respectfully traversed. Applicants note that the Examiner has provided no argument with respect to the '106 patent in the current rejection.

As discussed above, Claims 23 and 33 as amended are directed to methods for treating obesity in a human subject in need of such treatment. In contrast, the cited claims of the '008 patent are silent with regard to treating obesity. Specifically, Claim 11 of the '008 patent is directed to a method for the treatment of diabetes mellitus in an insulin-requiring mammal (human) comprising administering a therapeutically effective amount of a calcitonin, and Claim 13 of the '008 patent is directed to a method of treatment of type II diabetes mellitus comprising administering a therapeutically effective amount of an insulin and a calcitonin where the ratio of insulin to calcitonin from about 100:1 to about 1:2 and is effective to achieve improved glycemic

control over insulin therapy alone. However, the cited claims of the '008 patent are silent with regard to treating obesity.

Similar to the rejection based on the '411 patent above, the Examiner's attempts to cure the deficiencies of the '008 patent by citing the alleged prevalence of intrinsic obesity (i.e., 80-90% according to Tsanev (*Id.*)) which falls short of the 100% required by the claims and required by the law. See *SmithKline Beecham Corp. v. Apotex Corp., id.* Thus, since the cited claims do not teach or suggest treating obesity, the intent of treat human subjects in need of treatment for obesity, or the use of an amount effective to treat obesity, a skilled artisan would have no expectation of success for the claimed invention in view of the cited claims. Thus, claims 11 and 13 of the '008 patent do not support *prima facie* obviousness with regard to the claimed invention, with or without any alleged evidence recited in the rejection. Accordingly, Applicants respectfully request reconsideration and withdrawal of the present rejection.

Rejection under 35 U.S.C. §112, first paragraph (New Matter)

The rejection of Claim 33 and claims dependent therefrom under 35 U.S.C. § 112, first paragraph (Office Action, page 8, item 23) as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, is respectfully traversed.

The present rejection appears to relate to three phrases appearing at Office Action, page 8, lines 8-10: 'in said human subject,' 'and wherein said human subject is in need of treatment for obesity,' and 'method of treating obesity .... consisting of administering.'

Regarding the phrase 'in said human subject,' Applicants respectfully submit that the amendment was made solely to define the claim with greater particularity and indeed, the phrase was the suggestion of the Examiner (Office Action dated April 23, 2007, page 22, first paragraph) to overcome the rejection of Claim 33 under 35 U.S.C. § 112, second paragraph, which rejection was overcome as evidenced by the current Office Action at page 4, item 14.

Regarding the phrase 'and wherein said human subject is in need of treatment for obesity,' Applicants respectfully submit that support for this phrase is found throughout the specification (at e.g., page 12, lines 24-26: "[t]reating obesity therefor includes the inhibition of weight gain and inducing weight loss in patients in need thereof (*emphasis added*).")

Regarding the phrase, 'method of treating obesity .... consisting of administering,' Applicants respectfully submit that ample support for this phrase is found throughout the specification, at e.g., Abstract (i.e., "... a therapeutically effective amount of an amylin or an amylin agonist alone or in conjunction with another obesity relief agent (*emphasis added*)"), or page 2, lines 9-12. Furthermore, in any event, Applicants respectfully submit that the term "consisting" as used in Claim 33 is a term of art (transitional claim language) that need not be specifically recited in the specification.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the present rejection for alleged new matter.

Rejections under 35 U.S.C. §112, first paragraph (Scope of Enablement)

The rejection of Claims 23, 24, 27, 29, 31-34, 37-39, 68, 72, 76, 80, 82, 84 and 95-97 under 35 U.S.C. § 112, first paragraph (Office Action, page 9, item 24) for allegedly lack of enablement is respectfully traversed.

The proper standard for determining compliance with the enablement requirement is whether the specification provides sufficient information to permit one skilled in the art to make and use the claimed invention. *United States v. Telectronics, Inc.*, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988). The test of enablement is not whether experimentation is necessary, but rather whether any experimentation that is necessary is undue. A considerable amount of experimentation is permitted, provided that it is merely routine, or provided that the specification provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed. *In re Wands*, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). A specification that discloses how to make and use a claimed invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented "must

be taken as in compliance with the enabling requirement of the first paragraph of $ 112 unless there is reason to doubt the objective truth of the statements contained therein." *In re Brana*, 51 F.3d 1560, 1566, 34 U.S.P.Q.2d 1436, 1441 (Fed. Cir. 1995) (quoting *In re Marzocchi*, 439 F.2d 220, 223, 169 U.S.P.Q. 367, 369 (C.C.P.A. 1971) (emphasis in original)).

With respect to reasons for doubting the objective truth of the specification, the Examiner asserts (Office Action, page 15, lines 20-31) that Applicants' discussion in an Appeal Brief filed July 2000 for the parent application (U.S. Appl. No. 08/870,762) regarding U.S. 5,739,106 (the "Rink patent" already of record) allegedly provides a reason for doubting the objective truth contained within the specification. However, when read in context, it is clear that the Rink patent only contemplates amylin-induces appetite suppression in rodents and not in human subjects as required by the instant claims. Indeed, the Rink patent does not describe the treatment of obesity in humans using amylin or an amylin agonist as required by the instant claims. Accordingly, Applicants respectfully submit that the Examiner's reliance on Applicants' Appeal Brief filed July 2000 for the parent application regarding the Rink patent is irrelevant.

It is well established that enablement does not require the inventor to submit an exact blueprint or recipe to practice the invention; thus, experimentation is allowed. *In re Angstadt*, 190 USPQ 214 (CCPA 1976). Rather, the determination of what constitutes undue experimentation relies on the Wands factors: (1) the quantity of experimentation necessary (time and expense); (2) the amount of direction or guidance presented; (3) presence of absence of a working example; (4) nature of the invention; (5) the state of the prior art; (6) the relative skills of those in the art; (7) the predictability or unpredictability of the art; and (8) the breadth of the claims. *In re Wands*, *Id.*:

The quantity of experimentation necessary (time and expense)

Regarding the quantity of experimentation needed, Applicants submit that the standard for determining enablement is whether the experimentation needed to practice the invention is undue or unreasonable. *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916). In this respect, one of ordinary in the art would have the ability to select amylin and amylin agonist peptides for use in the claimed methods without undue experimentation in view of the specification.

The amount of direction or guidance presented

The specification broadly discloses that the claimed amylin compounds are useful in the treatment of obesity in a subject in need thereof. The specification and claims as filed further discloses amylin agonist analogues of the invention with great particularity. Furthermore, there is express guidance as to modes of administration, therapeutic dosages, mechanisms for assessing therapeutic efficacy, as well as a working example to demonstrate the statistically significant ability of an exemplary amylin compound to treat obesity in a human subject in need thereof. In a working example, the human subjects were Type 2 diabetics. That the working example illustrated Type 2 diabetic subjects taking insulin does not render the scope of enablement limited to this subject population. Rather, it demonstrates that in a particularly difficult to treat, obese subject population (Type 2 diabetic subjects taking insulin), an exemplary amylin compound is therapeutically effective in the treatment of obesity.

Moreover, taken together with the teachings of the specification, the working example provides a baseline approach for establishing therapeutic efficacy of exemplary amylin compounds within the context of the presently claimed methods. Utilizing similar study structures, Applicants have in fact established that exemplary amylin compounds are effective in the treatment of obesity in non-diabetic subjects as well (see, e.g., IDS entries AZ1, AZ2, AZ4 and AZ5 of Aronne, et *al. and* Smith, et *al.* of record). This evidence confirms the teachings of Applicants specification, and demonstrates that Applicants' working example in fact provides enablement of the efficacy of a particularly difficult to treat, chronically obese subject population.

The Examiner further asserts (Office Action, page 16, lines 5-9 that "the instant specification fails to show that human or non-human amylin, or a composition comprising or consisting of the same, was in fact, soluble and/or non-aggregating enough to be 'therapeutic' in a method of treating obesity upon administration in any amount and by any route, with or without concurrent insulin therapy, to a diabetic or non-diabetic human subject in need of treatment for obesity." Applicants respectfully submit that the Examiner is impermissibly attempting to limit the scope of enablement to the scope of Applicants' working examples. Based on the extensive guidance provided in the specification, including the human clinical study results, as well as the

high level of skill in the art, the skilled artisan would be able to evaluate efficacy of amylin compounds in accordance with the methods of the inventions to ascertain therapeutically effective amounts of the recited amylin compounds. In fact, the Examiner's characterization of Example 1 only serves to underscore the enablement of the claims in this regard. For instance, Example 1 describes a clinical study wherein routine dosages were evaluated in human clinical subjects to ascertain a therapeutically effective dose as well as effective administration regimens.

The presence of absence of a working example

Applicants submit that the working examples, in combination with the disclosure of the specification and knowledge of one skilled in the art, amply enable the full scope of the invention as presently claimed.

The nature of the invention

Applicants respectfully asscrt that the nature of the invention is pertinent to the treatment of obesity in a human subject in need of such treatment comprising or consisting of administering an amylin, an amylin agonist, or an amylin agonist analogue composition or compound in a defined amount, which amount is effective to treat obesity in the subject. Specifically, the invention contemplates the treatment of obesity in human subject in need of treatment by the administration of an amylin or amylin agonist. Indeed, Applicants discovered that amylin or amylin agonists can be used for the treatment of obesity.

The state of the prior art

Applicants submit that obesity or adiposity as a chronic disease that is highly prevalent in modern society, which disease is strongly associated with multiple conditions including diabetes mellitus, insulin resistance, hypertension, etc. However, it was Applicants' discovery that amylin or amylin agonists could be administcred to a human subject in need of treatment for obesity. In this respect, one of ordinary skill in the art would have the ability to select amylin and amylin agonist peptides for use in the claimed methods without undue experimentation. Indeed, amylin compounds recited in the claims are generally recognized as a defined class of compounds, and the specification provides ample direction and guidance to those skilled in the art with regard to the identification of such amylin compounds useful in the context of the claimed methods.

The relative skills of those in the art

The relative skill of one skilled in the art to which the invention pertains is very high.

The predictability or unpredictability of the art

The Examiner alleges that the state of art with regard to the use of amylin is unpredictable. In this regard, the Examiner asserts (Office Action, page 14 line 27 to page 15, line 12) that both Baron *et al.* and Ratner *et al.* indicate the impracticability of using amylin as a therapeutic agent. Applicants respectfully disagree. Whether native human amylin is suitable for use as a commercial drug product is not a proper standard for judging the enablement of the present claims. Moreover, contrary to the Examiner's characterization of the cited references, it is submitted that both Baron *et al.* and Ratner *et al.* actually support enablement of the claimed invention. That is, given the teachings of the instant specification, one of ordinary skill in the art would have the ability to select amylin and amylin agonist peptides for use in the claimed methods without undue experimentation. This further confirms that both amylin and amylin agonists are well known compounds that have been widely characterized. Given this, one of ordinary skill in the art would have the requisite skill to practice the invention commensurate in scope with the claims without undue experimentation.

The breadth of the claims

In rejecting the claims, the Examiner impermissibly attempts (e.g., Office Action page 9, lines 14-24) to limit the invention to the scope of the examples. Applicants respectfully submit that such a standard is legally incorrect. As set forth in MPEP § 2164.02, "[f]or a claimed genus, representative examples together with a statement applicable to the genus as a whole will ordinarily be sufficient if one skilled in the art (in view of level of skill, state of the art and the information in the specification) would expect the claimed genus could be used in that manner without undue experimentation." This is exactly what Applicants have provided. For example, Tables I-VII and Examples 1-3 disclose data relating to the claimed methods and exemplary amylin compounds. Alone, this disclosure is sufficient such that one of ordinary skill in the art at the time the invention was made would have the ability to practice the invention commensurate in scope with the claims.

The Examiner also comments on the scope of the claimed amylin compounds, and asserts (Office Action, page 12, lines 26-27) that "[t]he only amylin agonist analogue species or the peptide species that was administered in the instant invention was ... pramlintide." Applicants respectfully traverse. Again, the Examiner appears to be focusing on the Examples rather than the teachings of the specification as a whole and the level of ordinary skill in the art. In this regard, it is noted that amylin compounds recited in the claims are generally recognized as a defined class of compounds, and the specification provides ample direction and guidance to those skilled in the art with regard to the identification of such amylin compounds uscful in the context of the claimed methods.

Furthermore, the specification is replete with examples of amylin agonists, including functional variants, fragments, and derivatives of amylin and amylin agonists. See, e.g., Table VIII and page 15, line 1 to page 19, line 5. Accordingly, given at least the discussion in the background concerning amylin agonists, one of ordinary skill in the art having read the specification would have the ability to select known amylin agonists without undue experimentation. Moreover, to the extent that any additional experimentation may be required, Applicants note that the performance of routine and well known steps cannot create undue experimentation even if it is laborious. See *In re Wands* (*Id.*); *In re Angstadt* (*Id.*).

Given the knowledge in the art, and based on the guidance provided in the specification regarding the extensive exemplary embodiments of amylin compounds, receptor binding assays and other assays for determining amylin activity, including the soleus muscle assay, and exemplary clinical study designs, additional therapeutically active amylin agonists can be identified within the context of the present claims without the need for undue experimentation. Based on such guidance, one of skill in the art would be able to practice the claimed invention with only routine experimentation.

Certain of the dependent claims recite specific types of amylin compounds. As generally understood by those of skill in the art, amylin analogues are compounds that are structurally related to the reference compound, i.e., amylin. As explained in the specification and understood by those skilled in the art, an amylin analogue can have one or more amino acid substitutions, deletions, inversions, or additions compared to a native or naturally occurring amylin.

Furthermore, the claims clarify that the amylin analogue is an amylin agonist analogue. Thus, in accordance with the claims and the knowledge of those of ordinary skill in the art, the recited amylin agonist analogues are both structurally and functionally defined.

The Examiner also makes numerous comments with regard to the scope of various claim terms and transitional phrases. For instance, various claim terms such as obesity and administering are discussed in a broad context. While Applicants do not necessarily agree with the exact definition provided by the Examiner, Applicants do acknowledge the broad scope of such terms commensurate with the present specification. Furthermore, the Examiner comments on the claims use of traditional transitional phrases such as "comprising," "consisting of," and consisting essentially of'. In this regard, Applicants note that such language have been used in their traditional context. Thus, within the context of the claimed methods for treating obesity, such terms of art would have their traditional meanings and limitations with regard to claim elements relevant to the treatment of obesity. However, such traditional claim terms would have no bearing on components, steps, or elements outside of the claimed scope of the treatment of obesity.

Accordingly, for at least these reasons, it is submitted that the claims are sufficiently enabled under 35 U.S.C. 3 112, first paragraph, and reconsideration and withdrawal of this rejection is respectfully requested.

Rejections under 35 U.S.C. §102

In order to anticipate a claim, a single prior art reference must provide each and every element set forth in thc claim. *In re Bond*, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990). See also, MPEP §2131. The identical invention must be shown in complete detail as it is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913 (Fed. Cir. 1989).

Claims 23, 24, 27, 29, 31, 33, 34, 37-39, 80 and 82

The rejection of Claims 23, 24, 27, 29, 31, 33, 34, 37-39, 80 and 82 under 35 U.S.C. § 102(b) (Office Action, page 20, item 26) for alleged anticipation over Kolterman *et al.* (WO 96/40220 ("Kolterman '220") as evidenced by Tsanev (*Id.*), is respectfully traversed.

As discussed *supra*, Applicants respectfully submit that the Examiner's reference (Office Action, page 21, line 8) to "second paragraph on page 9 of the substitute specification" in fact refers to the substitute specification for US 08/870,762, for which the instant application is a continuation-in-part. Accordingly, for at least this reason, Applicants respectfully request removal of the finality of the current Office Action and issuance of a new Office Action.

More specifically, the claimed invention is directed to methods of treating obesity in a human subject in need of such treatment by administration of a defined amount of an amylin or an amylin agonist. In contrast, Kolterman '220 describes the use of an amylin agonist (i.e., pramlintide) for treating type II diabetes mellitus. However, Kolterman '220 does not teach the use of an amylin or an amylin agonist for treating obesity or demonstrate a reduction in body weight in those patients administered an amylin or an amylin agonist. Indeed, Kolterman '220 is silent with regard to the effect of an amylin or an amylin agonist on body weight. Furthermore, Kolterman '220 is silent with respect to a target population in need of treatment for obesity.

In an attempt to cure the deficiency of Kolterman '220, the Examiner relies on Tsanev (*Id.*) to provide alleged evidence that 80-90% of the diabetic patient population are obese, discussed *supra*. The Examiner then asserts (Office Action, page 22, lines 5-11) that

> [g]iven Tsanev's express disclosure that 80 to 90% of type II diabetic patients are intrinsically obese, and given Kolterman's ('220) express recognition that obesity is a characteristic of 'most patients with Type II diabetes mellitus' and the indication that these patients are in need of weight loss, Kolterman's ('220) method of subcutaneous administration of pramlintide to at least one Type II diabetic patient in an amount that falls within the range recited in the instant claims, necessarily serves as the claimed method of treating obesity and therefore anticipates the instantly claimed method (*emphasis added*).

Applicants disagree with the Examiner's assertion of anticipation by Kolterman '220 as evidenced by Tsanev (*Id.*). Anticipation based on inherency is appropriate only when the prior art relied upon necessarily includes all of the elements of the claims in question, *Atofina v. Great Lakes Chemical Corp.* (*Id.*), and is the natural result of following the instructions or examples of the prior art. See *SmithKline Beecham Corp. v. Apotex Corp.*, (*Id.*); *Schering Corp. v. Geneva Pharms., Inc.*, (*Id.*). The Court in *Schering* relied in part on the decision *In re Cruciferous*

Sprouts Litigation, (*Id.*) wherein it was noted that to demonstrate inherency, it was necessary to show that the prior art necessarily, always functions in accordance with the claims addressed. The requirement that the teaching of a reference always, under any circumstances, necessarily satisfies the recitation of the claims to make out a case of inherent anticipation was reaffirmed by the Federal Circuit in *Abbott Laboratories v. Baxter Pharmaceutical Products, Inc.*, (*Id.*). It is well settled that a determination of inherency cannot be established by probabilities or possibilities, but that it is incumbent upon the Examiner to establish the inevitability of the inherency which is propounded. *In re Oelrich*, (*Id.*); *In re Wilding*, (*Id.*)

Accordingly, a reference which teaches treating type II diabetic patients with an amylin or amylin agonist does not necessarily teach treating patients with obesity. Thus, the claimed invention cannot be recognized by one skilled in the art as inherently taught in the cited reference.

Furthermore, the courts have held that the phrase "in need thereof" is meaningful, and that "the claims' recitation of a patient or a human 'in need' gives life and meaning to the preambles' statement of purpose." *Jansen v. Rexall Sundown, Inc.* (*Id.*). Thus, Kolterman '220 cannot render unpatentable by inherency the subject population of the claimed invention, nor the intent to treat the same. Accordingly, Kolterman '220 does not support anticipation of the claimed invention, and Applicants respectfully request reconsideration and withdrawal of the present rejection.

Claims 23, 24, 29, 33, 34 and 38

The rejection of Claims 23, 24, 29, 33, 34 and 38 under 35 U.S.C. §102(e)(2) (Office Action, page 24, item 27) for alleged anticipation over the '411 patent as evidenced by Tsanev (*Id.*) is respectfully traversed.

As noted above, the claimed invention is directed to methods of treating obesity in a human subject in need of such treatment through administration of a defined amount of an amylin or an amylin agonist. In contrast, the '411 patent discloses a method of treatment of diabetes mellitus in a mammal comprising the administration of a defined amylin agonist.

However, nothing in the '411 patent teaches or suggests the use of an amylin or an amylin agonist in an amount effective to treat obesity, and nothing in the '411 patent teaches or suggests the identification of a subject in need of treatment for obesity.

In an attempt to cure the deficiency of the '411 patent, the Examiner relies on Tsanev (*Id.*) to provide alleged evidence that 80-90% of diabetic patients are obese. Indeed, the Examiner asserts (Office Action, page 26, lines 10-13) that 'Tsanev is not used as a secondary reference in combination with the reference of Gaeta et al. ('411), but rather is used to show that every element of the claimed subject matter is disclosed by Gaeta et al. ('411) with the unrecited limitation(s) being inherent as evidenced by the state of the art (*emphasis added*)." However, the law is clear that anticipation based on inherency is appropriate only when the prior art relied upon necessarily includes all of the elements of the claims in question, *Atofina v. Great Lakes Chemical Corp.* (*Id.*), and is the natural result of following the instructions or examples of the prior art. See *SmithKline Beecham Corp. v. Apotex Corp.,* (Id.) In the present case, 80-90% falls short of the 100% (i.e., always, under any circumstances) criterion required by the claims and required by the law. Accordingly, the '411 patent does not anticipate the claimed invention, and Applicants respectfully request reconsideration and withdrawal of the present rejection.

Claims 23, 24, 27, 29, 31, 33, 34, 37-39, 80 and 82

The rejection of Claims 23, 24, 27, 29, 31, 33, 34, 37-39, 80 and 82 under 35 U.S.C. §102(b) (Office Action, page 27, item 28) for alleged anticipation over Kolterman et al (*Diabetologica* **39**: 492-499, 1996) ('Kolterman 1996') as evidenced by Itasaka et al. (*Psychiatr. Clin. Neurosci.* **54**:340-341, 2000), is respectfully traversed.

Subject matter contemplated by the claimed invention is described *supra.* In contrast, Kolterman 1996 merely describes the use of an amylin agonist (pramlintide) for treating patients with insulin-dependent diabetes mellitus and demonstrates that administration of the amylin agonist significantly reduces postprandial plasma glucose concentrations. Kolterman 1996 does not teach or suggest the use of the amylin agonist for treating obesity or demonstrate a reduction in body weight in those patients administered the amylin agonist. Indeed, Kolterman 1996 does not report the weight of the subjects at the end of the study. Furthermore, nothing in the

reference indicates that pramlintide had any effect on the weight of the subjects. Thus, Kolterman 1996 is silent with regard to the effect of the amylin agonist on body weight.

In an effort to cure the deficiencies of Kolterman 1996, the Examiner relies on Itasaka *et al.* (*Id.*) to allegedly provide a correlation between body mass index (BMI) and obesity. Applicants respectfully disagree with the Examiner assertion (Office Action, page 28, lines 25-26) that "the very active step recited in the instantly claimed method was disclosed and practiced by Kolterman et al. in April, 1996." The patient population of Kolterman 1996 is not necessarily the same as the claimed subject, *i.e.*, a subject in nced of treatment for obesity. The Examiner has provided no extrinsic evidence to show that these patient populations are identically one in the same. Accordingly, Applicants respectfully note that the "fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993). "To establish inhcrency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the references, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficicnt.' " *In re Robertson* 169 F.3d 743, 745 (Fed. Cir. 1999).

Furthermore, the courts have held that the phrase "in need thereof" recited in the claims is meaningful, and that "the claims' recitation of a patient or a human 'in need' gives life and meaning to the preambles' statement of purpose." *Jansen v. Rexall Sundown, Inc.* (*Id.*). Thus, Kolterman 1996 cannot render unpatentable by inherency the subject population of the claimed invention, with or without Itasaka et al. (*Id.*). Thus, Kolterman 1996 does not provide each and every element of the claimed invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of the present rejection.

Claims 23, 24, 27, 29, 33, 34, 37 and 38

The rejection of Claims 23, 24, 27, 29, 33, 34, 37 and 38 under 35 U.S.C. §102(e)(2) (Office Action, page 30, item 29) for alleged anticipation over the '008 patent as evidenced by Tsanev (*Id.*) is respectfully traversed.

The claimed invention as exemplified in Claims 23, 24, 27, 29, 33, 34, 37 and 38 is directed to methods of treating obesity in a human subject in need of such treatment through administration of a defined amount of an amylin or an amylin agonist. In contrast, the '008 patent describes a method of treating diabetes mellitus in an insulin-requiring human who suffers from Type 1 or Type 2 diabetes mellitus. However, the '008 patent is silent with respect to obesity, treatment of obesity, or identification of a population in need of treatment for obesity.

In an attempt to cure the deficiency in the '008 patent, the Examiner relies on Tsanev (*Id.*) to provide alleged evidence that 80-90% of diabetic patients are obese. However, 80-90% falls short of the 100% (i.e., always, under any circumstances) criterion required by the law as discussed *supra*. See e.g., *Schering Corp. v. Geneva Pharms., Inc.*, *Id.*; *Abbott Laboratories v. Baxter Pharmaceutical Products, Inc.*, (*Id.*) Thus, the '008 patent does not provide each and every element of the claimed invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of the present rejection.

CONCLUSION

Applicants believe that all issues raised in the Office Action have been properly addressed in this response. Accordingly, reconsideration and allowance of the pending claims is respectfully requested. If the Examiner feels that a telephone interview would serve to facilitate resolution of any outstanding issues, the Examiner is encouraged to contact Applicants' representative at the telephone number below.

No additional fees are believed due for this submission. However, if a fee is due, the Commissioner is hereby authorized to charge payment of any fees associated with this communication, to Applicants' Deposit Account No. 010535 referencing Docket No. 235/013US. Additionally, the Commissioner is hereby authorized to charge payment or credit overpayment of any fees during the pendency of this application to Applicant's Deposit Account No. 010535.

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Respectfully submitted,

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